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## Forest Industry at a Glance



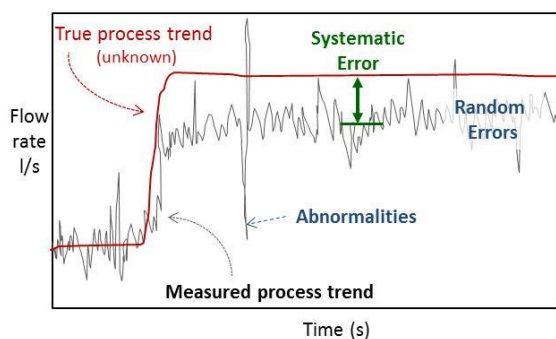
Tuesday, December 11 2012

### Online Process and Instrumentation Troubleshooting

With advancements in information processing and database management systems, the pulp and paper industry has become an information-intensive manufacturing environment. Even though process data management systems have been integrated into pulp and paper production facilities for many years now, they are still not being exploited to their full potential. Real-time measured process data is commonly not used in a systematic fashion for problem solving. The main reason for this is that process measurements are inherently corrupted with various sources of error (Figure 1), such as *systematic errors* (instrument miscalibration or malfunction), *abnormalities* (power supply fluctuations), as well as *random errors* (wiring and process noise). It is common that product quality downgrading can be traced back to instrument faults.

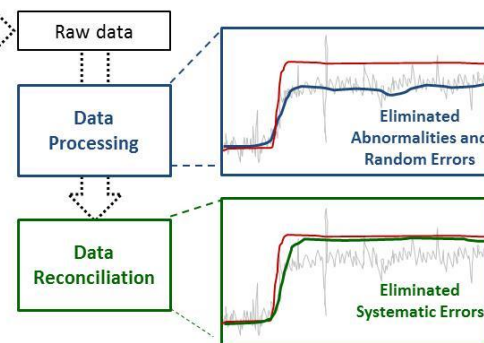
A sophisticated tool for cleansing measured process data can be implemented in order to detect false measurements and process problems in order to observe data trends that are as close to reality as possible. Data processing and data reconciliation are the most common techniques used in today's processing industries for this purpose. Data processing eliminates random errors and abnormalities from real-time measurements, whereas data reconciliation is used to detect systematic errors and adjust further process measurements by eliminating errors that are associated with inconsistencies compared to the actual (or true) process value or trend (Figure 2). The use of these tools would enhance process control, diminish sensor maintenance costs, enhance process and instrumentation troubleshooting activities, and finally allow for the use of measured process data for higher level tasks such as cost accounting and/or process optimisation.

Figure 1: Types of errors in measurements



Source: KSH Consulting

Figure 2: Simplified methodology for cleansing real-time process measurements



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